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## REVIEWS

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*Increase of Population in the United States 1910-1920*, by William S. Rossiter.  
Bureau of the Census. 1922. 259 pp.

This publication, the first of a projected series of monographs upon various aspects of the census of 1920, is an attempt "to present a statistical picture of national progress," especially as mirrored in the changes of population and its various classes between 1910 and 1920. The statement of purpose suggests that the monograph might be compared with Tucker's *Progress of the United States in Population and Wealth in Fifty Years as Exhibited by the Decennial Census* (1843), a very able attempt by a private scholar to elucidate the results of the first six censuses which the government had printed with no effort at interpretation. It might also be compared with various chapters or sections in later census reports after some influence, possibly that of Professor Tucker, had led the officials, beginning with DeBow in 1850, to present the main results in words as well as figures. Among the publications of the latter class these may be mentioned:

In the Tenth Census: Population, Volume I—Walker and Gannett's "General Discussion of the Movements of Population 1790 to 1880," especially pages xi-xli.

In the Eleventh Census: Population, Part I—Porter, Gannett and Hunt's "Progress of the Nation 1790 to 1890."

In the Twelfth Census: Population, Volume I—Hunt's discussion of the "Statistics of Population," and in the Supplementary Analysis, various chapters by the writer and others.

In the Thirteenth Census: Several chapters introducing the tables dealing with the different topics.

One might go farther afield and compare this monograph and its successors with the introductory volumes in several foreign censuses. A careful study of the degree and way in which the census figures of population have been interpreted in different countries and at different dates by the office responsible for them would probably be worth while. But such a study would exceed the scope of a review and call for more space than is now available. Suffice it to say that the present monograph has been prepared in a manner somewhat different from its forerunners. Heretofore such writing has been done either by an outsider making no use of office resources (Tucker) or by a member of the staff. The writer of this analysis is one who won high position and reputation within the office and then withdrew to more inviting fields, but who did not end his intimate association with his former colleagues of the Census Bureau.

His work is a product of coöperation between an outside expert and the office which finds its only prototype in the manufactures census of 1900. It is the first fruit of a policy introduced in the census of 1920 at the suggestion of the Advisory

Committee of the American Statistical Association and the American Economic Association. It appeared that the mandate of Congress for the completion and publication of the preceding census within three years, a mandate without a sanction, had not been obeyed. Therefore the advisory committee urged that rapid production was after accuracy the most important duty and opportunity of the office, that to assure this result there should be no delay for the preparation of text other than what was needed to make the meaning of the figures clear, and that the Bureau should arrange for the publication later of special studies or monographs to aid in the interpretation of its figures. The first of these prepared by the chairman of the joint Advisory Committee is now given to the public.

With these explanations the following summary of some of its main points, with running comments or criticisms in the few cases where I differ, will stand in its proper perspective.

The population of the United States in 1920 exceeded that in 1910 by 13.74 million. To determine the number of new members of the population at the later date the monograph adds to this 13.74 million 11.24 million to balance the number of persons enumerated in 1910 who died between that year and 1920, and 2.28 million to balance the number who left the country in the same decade and were alive at its close.

To estimate the number who died, 1910-20, among those enumerated in the earlier year the office has applied the annual death rate of the registration area in 1910 to the population of the country in that year, the rate for the population above one year of age in the registration area in 1911 to the survivors throughout the country in that year, and so on. One of the assumptions underlying this method, namely, that the death rates in the registration area give the closest approximation available to the death rates in the country, is quite far from the truth. For the proportions of the sexes and ages in the population of the registration area may be different from those in the population of the United States, and the proportions of the two main races certainly are different. Thus the present method assumes a death rate of 14.958 per 1,000 in the population of the United States in 1910 because that was the rate in the registration area. But the death rate of whites in the registration area (14.573 per 1,000) applied to the whites in the country yields 1,191,080 deaths, and the death rate of colored in the registration area (24.202 per 1,000) applied to the colored in the country yields 247,836 deaths, a total of 1,438,916 estimated deaths in the country, indicating a rate of 15.645 instead of 14.958 per 1,000 for the entire country in 1910. In other words, after a correction for race it appears that the death rate proper to use exceeds that employed by 0.687 per 1,000 or 4.59 per cent. With this correction the estimated number of deaths in the decade is raised by 516,000, and the population in 1920, estimated by adding to the survivors of those enumerated in 1910 all natives under 9 and 17/24 years (the interval between the censuses of 1910 and 1920), and the survivors of all immigrants becomes 105,400,000 instead of 105,920,000. The result is of importance because the figures in the monograph point toward omissions of 210,000 in the census of 1920, while my substituted figures suggest that the enumeration of 1920 found 310,000 more people than would have been expected.

The rate of decennial increase in the population of the United States has been falling since 1860, but the regularity of this change is obscured by omissions undoubted and serious at the census of 1870 and probable though smaller in amount at that of 1890. The rates of decennial increase since 1900 after correcting for the fact that the enumerations were not quite ten years apart were 21.3 per cent between 1900 and 1910, and 15.4 per cent between 1910 and 1920, so that the rate in the later decade was less than three-fourths of that in the earlier.

This checking of the growth of population affected the great divisions of the country very differently. If we neglect for a moment the far West, that is, the mountain and Pacific divisions, and consider only the North and South, it appears that between 1900 and 1910 the South increased about one-seventh faster than the North, but between 1910 and 1920 the North increased about one-fifth faster than the South. In the earlier of these two decades the states west of the Mississippi increased seven-tenths faster than those east of it, but in the later they increased only one-seventh faster. To present the changes in a somewhat different way, the states of the mountain and Pacific divisions increased in the second decade of the country less than half as fast as in the first, the southern states increased about two-thirds as fast, and the northern states increased four-fifths as fast. This closer approach to the earlier rate of growth in the northern states with a high proportion of urban population suggests, what other figures establish, that the cities have retained their former rates of growth more nearly than the rural districts have. In fact, the increase of American cities in 1910-20 was at a rate nearly three-fourths of that in the preceding decade; the increase in the rural districts fell to less than one-half of the rate ten years earlier.

May I here repeat a suggestion of many years ago that the census definition of an urban district or city, namely, an incorporated place containing at least 2,500 inhabitants, is provisional and temporary. The main distinction between city and country, I take it, is that in the country more food and in the city less food is produced than is needed to support the people who live within the area. If this be so, the line of separation should be based not on total population but on density. For example, there is no good ground in my opinion, except the fact that we lack a practicable and better definition, for calling Ithaca in Tompkins County, New York, a city and Groton in the same county rural because the former has 17,000 people and the latter only 2,235. For the average density of population in Groton is 3,788 and in Ithaca 3,721 persons to a square mile. Perhaps in future decades, when the area and population of all small divisions of the United States have been measured, we shall define rural districts as those with so low a density of population that they produce more food than they consume, and cities as those districts with so high a density of population that they consume more food than they produce. An intermediate class, composed of districts where both agriculture and other occupations are important sources of a livelihood, may be necessary.

In comparing the growth of city and country one may define the urban population of 1910 or 1920 as the population of all incorporated places which then had at least 2,500 inhabitants, ignoring the fact that several hundred places had less than that population in 1910 but more in 1920. Or one may treat as urban at

both censuses those places and those only which in 1920 (or 1910) had at least 2,500 inhabitants. Under the former method American cities grew, 1910-20, nine times as fast as country districts; under the latter and more accurate method they grew less than five times as fast. This second method, however, is not above criticism, for it rests on the assumption that the boundaries of all cities were the same in 1920 as in 1910, although one may feel sure that a significant number annexed territory during the decade and thus swelled their real increase. Under the method of a diminishing rural area the gain in the rural districts, 1900-10, was more than one-fourth, and 1910-20, little more than one-ninth of the increase in the country as a whole. If the large group of northern states from Maine to North Dakota and south to Mason and Dixon's line, the Ohio, and the southern boundary of Missouri and Kansas be regarded as a unit, the number of persons living outside of incorporated places with at least 2,500 inhabitants was about 175,000 less in 1920 than in 1910.

The excess of males which had been noted in the United States for a century rose slowly from 1820 to 1860 when it was nearly three quarters of a million, fell in the following decade by 300,000 as a result of the Civil War and the concurrent check to immigration, then rose for forty years until in 1910 it was about 2,700,000. But in the last decade of war and slackened immigration it fell again by 600,000. In 1920 the excess of males was still above 2,000,000 and greater in amount than at any date before 1910. But the ratio of excess was less than in 1890 or 1900.

About age little is said directly in the monograph, and occasionally the writer seems not to allow enough for changes in age composition. Thus, he tries to explain the larger proportion of widows in 1920 as compared with New Hampshire figures of 1773 by supposing that before the Revolution "the marital relationship was held to be more desirable" and that it was then more difficult for widows to support themselves (page 147). Although these were probably factors I suspect that an influence at least equally powerful may be found in the fact that the average age of the population in 1920 was fully ten years greater than in 1773, and that widowhood being a function of age naturally increased with it.

Mr. Rossiter suggests that the extinction of the North American Indian (sc. in the United States) "has been averted by increasing intermarriage" (page 137). Does not this depend upon the definition of extinction? Few would offer evidence to show that the amount of Indian blood in our population has diminished. But it may be true, nevertheless, that the number of persons with obvious Indian characteristics is decreasing, and intermarriage would not avert but rather contribute to that kind of extinction. Or if one means by an Indian a person living in tribal relations under Indian law and custom, the evidence for approaching extinction is even more convincing.

Notwithstanding these few points at which I am disposed to take issue with the writer's conclusions, or rather with the office methods or practice upon which he stands, the monograph as a whole commends itself as careful, thorough, discriminating, and above all, readable and significant. It will arouse a new and wider interest in the meaning of census figures and of the changes in population which they mirror and reveal.

We may admit for it and hope for its successors that the policy exemplified by the series, as the Director claims in his prefatory note, "is clearly a long step in advance in the effort to make the decennial census of as much practical value to the Nation as possible" (page 7) and yet ask whether this effort goes more than half way toward the ideal. The Bureau of the Census ought to be the best place in the United States for the training of statisticians. A forceful and competent director, interested in securing that result, who had a reasonably permanent tenure and who was able to get backing from Congress, might make it so. In the twenty years of its life as a permanent office the Bureau has had directors of various types, but none, I believe, who has made this a real part of his job. Until his work is more nearly divorced from politics or until the assistant director becomes the permanent and recognized head of the scientific personnel and the director's chief of staff in all matters scientific or professional, the organization of the Bureau of the Census on the scientific side will continue to be seriously defective. Work like that I tried to do in 1900 and like Mr. Rossiter and his followers are doing in this series may salve the defect for an emergency; they cannot really cure it.

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*Wages and Hours in Anthracite Mining.* National Industrial Conference Board, Research Report Number 47. New York: The Century Co. 1922. 67 pp.

This report is compiled from questionnaires submitted to 47 per cent of the operating anthracite mining companies. It covers about 60 per cent of the employees in the anthracite mining industry. Women workers, boys, foremen, salaried and clerical workers are excluded from the report. Moreover, all employees who did not work within two days of the full time offered by the employers in the semi-monthly periods studied were excluded from the report. This was done because the mining companies contend that to include all wage-earners irrespective of the time worked "would give a distorted picture," since miners frequently shift from mine to mine or from job to job within the same mine. This turnover increases the total number on the payroll in any given period and lowers the apparent average earnings. The report itself recognizes the weakness of this procedure, for it says:

Obviously, the comprehensive way of dealing with the wages and hours of work situation in the anthracite mining industry would be to secure and analyze pertinent data for all mine workers, properly classified according to the number of days and hours worked in each pay period, and to give each group its proper weight in the final determination of the average conditions in the industry in respect to wage earnings and working time. This would also permit of definite evaluation in comprehensive and scientific manner of such peculiarities of labor turnover and payroll records as are claimed to exist in the industry. . . . In presenting the results of its investigation the Board therefore reserves judgment as to their adequacy in representing general wage-earning conditions in the industry until more evidence is available regarding the effects of excluding the shifting or part-time workers.

Nevertheless it is argued (p. 9) that the study "affords a fair picture of wage-earning conditions in the industry."